

HRS DOCUMENTATION RECORD—REVIEW COVER SHEET

Name of Site: **JERVIS B. WEBB CO.**

Contact Person: Karen Jurist, EPA Region 9 (415) 972-3219

Site Investigation: Karen Jurist, EPA Region 9 (415) 972-3219

Documentation Record: Amanda K.C. Reilly, Weston Solutions, Inc. (541) 593-3800

Pathways, Components, or Threats Not Scored

Surface Water Pathway

The surface water pathway was not scored because there are no surface water intakes, fisheries, or sensitive environments associated with the Los Angeles River downstream of the site. The Los Angeles River is located approximately 0.2 miles east of the site and empties into San Pedro Bay approximately 13 miles downstream of the site (Ref. 4; Ref. 22, Plate 1). The Los Angeles River is highly modified, having been lined with concrete along a majority of its length by the U.S. Army Corps of Engineers in the 1950s. Flows are dominated by urban runoff and tertiary-treated effluent from several municipal wastewater treatment plants (Ref. 17, p. 1, 3).

Soil Exposure Pathway

The soil exposure pathway was not scored because there are currently no known resident individuals, sensitive environments, or resources on or within 200 feet of sources at the site. In addition, the majority of the properties are covered in pavement and/or buildings. Businesses are currently operating on the Jervis B. Webb Co. property and workers are present onsite (Ref. 15). However, scoring the soil exposure pathway does not affect the listing decision.

Air Migration Pathway

The air pathway was not scored because there is no documented observed release to the atmosphere, and scoring the potential to release to air would not likely contribute significantly to the overall site score.

HRS DOCUMENTATION RECORD

Name of Site: **JERVIS B. WEBB CO.**

EPA ID#: CAD008339467

EPA Region: 9

Date Prepared: September 2011

Street Address of Site*: 9301 Rayo Avenue and 5030 Firestone Boulevard

City, County and State: South Gate, Los Angeles County, California 90280

Topographic Map: South Gate, California USGS 7.5-Minute Quadrangle (Ref. 3)

Latitude: 33° 57' 01.17" North Longitude: 118° 10' 40.86" West (Ref. 4)

Latitude/Longitude Reference Point: The latitude and longitude were measured from the approximate center of the source sampling points (Ref. 3; Ref. 4; Figure A-3 of the HRS documentation record).

SCORES		
Air Pathway	=	Not scored
Ground Water Pathway	=	100.00
Soil Exposure Pathway	=	Not scored
Surface Water Pathway	=	Not scored
HRS SITE SCORE	=	50.00

*The street addresses, coordinates, and contaminant locations presented in this HRS documentation record identify the general area where the site is located. They represent one or more locations EPA considers to be part of the site based on the screening information EPA used to evaluate the site for NPL listing. EPA lists national priorities among the known "releases or threatened releases" of hazardous substances; thus, the focus is on the release, not precisely delineated boundaries. A site is defined as where a hazardous substance has been "deposited, stored, placed, or otherwise come to be located." Generally, HRS scoring and the subsequent listing of a release merely represent the initial determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will be refined as more information is developed as to where the contamination has come to be located.

HAZARD RANKING SYSTEM SUMMARY SCORESHEETS

SITE NAME: JERVIS B. WEBB CO.

CITY/COUNTY/STATE: South Gate, Los Angeles County, California

EPA ID #: CAD008339467

EVALUATOR: Amanda K. C. Reilly

DATE: September 2011

LATITUDE: 33° 57' 01.17" N **LONGITUDE:** 118° 10' 40.86" W

	S	S ²
Ground Water Migration Pathway Score (S _{gw})	100.00	10,000
Surface Water Migration Pathway Score (S _{sw})	Not scored	Not scored
Soil Exposure Pathway Score (S _s)	Not scored	Not scored
Air Migration Pathway Score (S _a)	Not scored	Not scored
$S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2$	XXXXXXXX	10,000
$(S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2) / 4$	XXXXXXXX	2,500
SQRT $((S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2) / 4)$	XXXXXXXX	50.00

SQRT = square root

TABLE 3-1: GROUND WATER MIGRATION PATHWAY SCORESHEET		
<u>Likelihood of Release to an Aquifer</u>	<u>Maximum Value</u>	<u>Value Assigned</u>
1. Observed Release	550	<u>550</u>
2. Potential to Release		
2a. Containment	10	—
2b. Net Precipitation	10	—
2c. Depth to Aquifer	5	—
2d. Travel Time	35	—
2e. Potential to Release [lines 2a x (2b + 2c + 2d)]	500	—
3. Likelihood of Release (higher of lines 1 and 2e)	550	<u>550</u>
<u>Waste Characteristics</u>		
4. Toxicity/Mobility	a	<u>10,000</u>
5. Hazardous Waste Quantity	a	<u>10</u>
6. Waste Characteristics	100	<u>18</u>
<u>Targets</u>		
7. Nearest Well	50	<u>18</u>
8. Population		
8a. Level I Concentrations	b	<u>0</u>
8b. Level II Concentrations	b	<u>0</u>
8c. Potential Contamination	b	<u>1,355</u>
8d. Population (lines 8a + 8b + 8c)	b	<u>1,355</u>
9. Resources	5	<u>0</u>
10. Wellhead Protection Area	20	<u>0</u>
11. Targets (lines 7 + 8d + 9 + 10)	b	<u>1,373</u>
GROUND WATER MIGRATION SCORE FOR AN AQUIFER		
12. Aquifer Score [(lines 3 x 6 x 11)/82,500] ^c	100	<u>100</u>
GROUND WATER MIGRATION PATHWAY SCORE		
13. Pathway Score (S_{gw}), (highest value from line 12 for all aquifers evaluated) ^c	100	<u>100</u>

^aMaximum value applies to waste characteristics category.

^bMaximum value not applicable.

^cDo not round to nearest integer.

Reference Number	Description of the Reference
1	Hazard Ranking System (HRS); Final Rule, 14 December 1990, Vol. 55, No. 241. 3 p. (A complete copy of the HRS is also available at the Regional docket and at http://www.epa.gov/superfund/sites/npl/hrsres/index.htm).
2	U.S. Environmental Protection Agency (EPA), Superfund Chemical Data Matrix (SCDM) Methodology, January 2004. 49 p. (excerpts) (A complete copy of the SCDM is available at http://www.epa.gov/superfund/sites/npl/hrsres/tools/scdm.htm)
3	U.S. Department of the Interior, U.S. Geological Survey, South Gate Quadrangle, California-Los Angeles County 7.5 Minute series Topographical Map, Photorevised 1981. 1 p.
4	Google Earth, 33° 57' 01.17" N, 118° 10' 40.86" W, California, http://earth.google.com/ , July 11, 2011. 1 p.
5	U.S. Environmental Protection Agency, Envirofacts Warehouse CERCLIS query results for the Jervis B. Webb Co. site (CAD008339467), http://www.epa.gov/enviro/html/cerclis/cerclis_query.html , accessed March 8, 2011. 2 p.
6	Los Angeles County Assessor, Detailed Parcel Information, Assessor ID No.: 6222-005-015, http://maps.assessor.lacounty.gov , accessed March 8, 2011. 1 p.
7	Los Angeles County Assessor, Detailed Parcel Information, Assessor ID No.: 6222-005-024, http://maps.assessor.lacounty.gov , accessed March 8, 2011. 1 p.
8	Los Angeles County Assessor, Parcel Map, Assessor ID Nos.: 6222-005-015 and 6222-005-024, http://maps.assessor.lacounty.gov , 2004, accessed March 8, 2011. 1 p.
9	Bechtel Environmental, Inc., Preliminary Assessment/Site Inspection, Site: Jervis B. Webb Co., September 1, 1994. 48 p.
10	Erler & Kalinowski, Inc., Consulting Engineers and Scientists, Phase II Soil Investigation Report, Jervis B. Webb Company Property, 5030 Firestone Boulevard, South Gate, California, February 18, 1998. 206 p. (excerpts).
11	Erler & Kalinowski, Inc., Phase II Groundwater Investigation Report, Jervis B. Webb Company Property, 5030 Firestone Boulevard, South Gate, California, June 30, 1998. 82 p.
12	U.S. Environmental Protection Agency, Envirofacts Warehouse CERCLIS query results for the Cooper Drum Company site (CAD055753370), http://iaspub.epa.gov/enviro/cerclis_web.report?pgm_sys_id=CAD055753370 accessed March 28, 2011. 3 p.

13	U.S. Environmental Protection Agency (EPA), Superfund Chemical Data Matrix (SCDM) Interim Revised Values, October 23, 2006. 1 p. (A complete copy of the SCDM is available at http://www.epa.gov/superfund/sites/npl/hrsres/tools/scdm.htm)
14	Rice, Anitra B. and Reilly, Amanda K.C., Weston Solutions, Inc., Telephone conversation with Ron Hernandez, City of South Gate, recorded on contact report, January 4, June 22 and August 22, 2011. 2 p.
15	Jurist, Karen, U.S. Environmental Protection Agency, Photographic Documentation and Observations Report, Jervis B. Webb Co., February 22, 2011. 2 p.
16	Innovative Technical Solutions, Inc., Cooper Drum Company Superfund Site Remedial Design Technical Memorandum for Field Sampling Results, Addendum No. 4, February 26, 2010. 451 pages.
17	Mullin, Mike, "Splash" Stormwater Program Newsletter, City of Los Angeles, Los Angeles River Characterization Study Underway, Fall 2000. 4 p.
18	Jervis B. Webb Company of California completed State of California, Department of Health Services, Uniform Hazardous Waste Manifest form, June 2, 1986. 1 p.
19	Jervis B. Webb Company of California completed State of California, Department of Health Services, Uniform Hazardous Waste Manifest form, December 19, 1988. 1 p.
20	Jervis B. Webb Company of California completed State of California, Department of Health Services, Uniform Hazardous Waste Manifest form, June 20, 1989. 1 p.
21	California Department of Water Resources, California's Groundwater Bulletin 118, Coastal Plain of Los Angeles Groundwater Basin, Central Subbasin, February 27, 2004. 6 p. (excerpts).
22	State of California, Department of Water Resources, Southern District, Bulletin No. 104, Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A, Ground Water Geology, June 1961. 207 p. (including Plates 1, 2, 3A, 3B, 4, 5, 6A, 6B, 6E and Table 1) (excerpts).
23	URS Group, Inc., Copper Drum Company Remedial Investigation Feasibility Study Report Volume 1, May 15, 2002. 289 p.
24	Rice, Anitra B. and Reilly, Amanda K.C., Weston Solutions, Inc., Telephone conversation with Martin Gonzalez, Walnut Park Mutual Water Company, recorded on contact report, October 29, 2010 and June 30, 2011. 1 p.
25	Rice, Anitra B. and Reilly, Amanda K.C., Weston Solutions, Inc., Telephone conversation with Bob Rohlf, Maywood Mutual Water Company #3, recorded on contact report, December 2, 2010 and August 24, 2011. 1 p.

26	Geology Dictionary, http://geology.com/dictionary/glossary-a.shtml , accessed June 30, 2011. 2 p.
27	Jurist, Karen, U.S. EPA Region IX, Telephone conversation with Jose Molina, City of Lynwood Public Works, recorded on contact report, May 25, 2011. 1 p.
28	Reilly, Amanda K.C., Weston Solutions, Inc., Memorandum Re: Reference 22 supplemental maps, August 23, 2011. 5 p.
29	U.S. Environmental Protection Agency, Envirofacts Warehouse CERCLIS query results for the Seam Master Industries site (CAN000905902), http://www.epa.gov/enviro/html/cerclis/cerclis_query.html , accessed July 14, 2011. 1 p.
30	Brown and Caldwell, Annual Groundwater Sampling Report – June 2005, 5030 Firestone Boulevard and 9301 Rayo Avenue, South Gate, California, July 28, 2005. 28 p.
31	Agency for Toxic Substances and Disease Registry, Toxicological Profile for Trichloroethylene, September 1997. 9 p. (excerpt).
32	Agency for Toxic Substances and Disease Registry, Toxicological Profile for Tetrachloroethylene, September 1997. 8 p. (excerpt).

ACRONYM LIST

bgs	below ground surface
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
DCE	Dichloroethylene or Dichloroethene
DWR	State of California Department of Water Resources, Southern District
EPA	United States Environmental Protection Agency
HRS	Hazard Ranking System
mg/kg	milligrams per kilogram
ug/kg	micrograms per kilogram
ug/l	micrograms per liter
PCE	Tetrachloroethylene or Tetrachloroethene
PDB	Passive Diffusion Bag
TCA	Trichloroethane
TCE	Trichloroethylene or Trichloroethene
VOC	Volatile Organic Compound

NOTES TO THE READER

1. Attachment A contains the following maps:
 - Figure A-1: Jervis B. Webb Co. Property Location Map
 - Figure A-2: Jervis B. Webb Co. Facility Location Map
 - Figure A-3: Historic Sample Location Map
 - Figure A-4: Drinking Water Well and Radius Map

SITE DESCRIPTION

The Jervis B. Webb Co. property is located at 9301 Rayo Avenue and 5030 Firestone Boulevard, South Gate, Los Angeles County, California (Ref. 3; Ref. 5, p. 1; Ref. 6, p. 1; Ref. 7, p. 1; Ref. 9, p. 2). The properties occupy approximately 3.82 acres (Ref. 6, p. 1; Ref. 7, p. 1; Ref. 8, p. 1; Ref. 10, p. 6). The Jervis B. Webb Co. property location is presented in Figure A-1. The property includes releases of volatile organic compounds (VOCs) and associated ground water contamination, which pose a hazard to people (see Section 3.1.1 of the HRS documentation record). The source evaluated for this HRS documentation record includes VOC-contaminated soil located in the northwest portion of the property (Ref. 10, p. 20; Figure A-3 of the HRS documentation record).

Development of the Jervis B. Webb property began in the early 1950s. Prior to that, the land was vacant (Ref. 10, p. 49, 50). Starting in the 1950s, the Jervis B. Webb Co. operated a custom conveyor and crane manufacturing facility on the 9301 Rayo Avenue property. The manufacturing process consisted of cutting, drilling, assembling, welding, and painting the steel pieces that comprised the final product. Hazardous substances utilized in the manufacturing process included oil-based paints with chlorinated solvents, lacquer paint thinner and 1,1,1-trichloroethane (1,1,1-TCA) (Ref. 9, p. 47; Ref. 20). The 5030 Firestone Boulevard property was acquired by the Jervis B. Webb Co. in 1960 and was occupied by the Blake Rivet Company from the 1950s until approximately 1980 (Ref. 9, p. 47; Ref. 10, p. 6). Operations conducted by the Blake Rivet Company included manufacturing aircraft rivets. The manufacturing process included an above ground anodizing operation that generated wastewater. Wastewater was discharged to a three-stage clarifier and then to a sanitary sewer. Raw materials stored on the property during the Blake Rivet Company's occupation, included metal stock and anodizing solutions (Ref. 10, p. 6). Jervis B. Webb also used the 5030 Firestone Boulevard property for storage of metal stock equipment and other materials including hazardous waste (Ref. 10, p. 6). The Jervis B. Webb facility is currently occupied by Reliable Steel (Ref. 15, p. 1, 2).

In 1997 and 1998, onsite soil and ground water samples from beneath the property were collected as part of a Phase II investigation. Soil samples indicated that tetrachloroethylene (PCE) and trichloroethylene (TCE) were detected at maximum concentrations of 140 milligrams per kilogram (mg/kg) and 270 mg/kg, respectively, in one sample collected at approximately 20 feet below ground surface (bgs) in the vicinity of the former clarifier (Ref. 10, p. 6-8, 20; Ref. 11, p. 5). Ground water samples collected beneath the property indicated that TCE was present in ground water at a maximum concentration of 24,000 micrograms per liter (ug/l) (Ref. 11, p. 15, 16, 24, 26).

In 2005, ground water samples from the property were collected as part of an annual ground water monitoring program. Ground water samples collected beneath the property indicated that TCE was present in ground water at a maximum concentration of 24,979 ug/l (Ref. 30, pp. 1, 2, 8, 17-19, 24). 1,1-DCE and trans-1,2-DCE were also detected in ground water samples at concentrations of 239.8 ug/l and 66.8 ug/l, respectively (Ref. 30, pp. 17, 23).

The Cooper Drum Company Superfund Site (EPA ID: CAD055753370) is located at 9316 Atlantic Avenue in South Gate, California (Ref. 12, pp. 1-2). The 3.8 acre facility is located approximately 450 feet southwest, and hydraulically downgradient gradient, of the Jervis B. Webb Co. property (Ref. 4; Ref. 16, pp. 7, 8). The Cooper Drum facility activities included drum reconditioning since the 1940s. Contaminants of concern associated with the Cooper

Drum facility include TCE and cis-1,2-dichloroethylene (DCE) (Ref. 16, pp. 7, 8). The Cooper Drum site was proposed to the NPL on January 11, 2001 and received its final listing on the NPL on June 14, 2001 (Ref. 12, p. 2). This HRS documentation record is a listing of releases from the Jervis B. Webb Co. site, not from Cooper Drum, that are contributing to a TCE- and PCE-contaminated ground water plume (see Sections 2.2 and 3.0 of this HRS documentation record).

The Jervis B. Webb Co. site is located in an urban area, in which numerous drinking water wells are located (Ref. 14; Ref. 24; Ref. 25; Ref. 27; Figures A-1 and A-4 of the HRS documentation record). Ground water contamination within the Gaspur Aquifer has been identified beneath the Jervis B. Webb Co. property (Ref. 11, p. 8, 15, 71, 72, 74, 77, 82; Ref. 22, Plate 3A; Section 3.0 of the HRS documentation record). Eight drinking water wells screened within the Gage and Exposition aquifers are located within 4 miles of the source at the site (Ref. 14; Ref. 22, Plate 3A; Ref. 24; Ref. 25; Ref. 27; Ref. 28, p. 2; Section 3.3.2.4 and Figure A-4 of the HRS documentation record). These wells were evaluated for potential contamination. Interconnection between the Semi-Perched, Gaspur, Exposition, and Gage aquifers is established within 2 miles of the source at the site and therefore are eligible to be scored as one interconnected aquifer (Ref. 1, Section 3.0.1.2.1; Ref. 22, Plates 3A, 6A, and 6E; Section 3.0.1 and Figures A-1 and A-2 of the HRS documentation record).

2.2 SOURCE CHARACTERIZATION

2.2.1 SOURCE IDENTIFICATION

Name of source: Contaminated soil at Jervis B. Webb Co.

Number of source: 1

Source Type: Contaminated Soil

Description and Location of Source (see Figure A-3):

Source 1 consists of contaminated soil located in the northern portion of the Jervis B. Webb Co. property located at 9301 Rayo Avenue and 5030 Firestone Boulevard in South Gate, Los Angeles County (Ref. 4; Ref. 5, p. 1; Ref. 6, p. 1; Ref. 7, p. 1; Ref. 9, p. 2; Ref. 10, p. 20; Figures A-1 and A-3 of the HRS documentation record).

Soils contaminated with VOCs associated with operations at the Jervis B. Webb Co. site have been detected at concentrations above background in soils collected on the property. Samples were collected during the 1997 Phase II soil sampling event (Ref. 10, p. 20).

The Jervis B. Webb Co. property lies on Los Angeles County Assessor Parcel Numbers 6222-005-015 and 6222-005-024. The parcels occupy approximately 3.82 acres (Ref. 6, p. 1; Ref. 7, p. 1; Ref. 8, p. 1; Ref. 10, p. 6). The 5030 Firestone Boulevard property was occupied by the Blake Rivet Company from the 1950s until approximately 1980 (Ref. 10, p. 6). Operations conducted by the Blake Rivet Company included manufacturing aircraft rivets. The manufacturing process included an above ground anodizing operation that generated wastewater. Wastewater was discharged to a three-stage clarifier and then to a sanitary sewer. Raw materials stored on the property during the Blake Rivet Company's occupation, included metal stock and anodizing solutions (Ref. 10, p. 6). After the operations by the Blake Rivet Company ceased, the 5030 Firestone Boulevard property consisted of an equipment storage and testing building and hazardous substance storage area on the eastern portion of the property. The 9301 Rayo Avenue property consisted of a raw steel storage area, a manufacturing building that included a paint spray booth, waste paint storage and waste oil storage (Ref. 9, pp. 3, 5).

Hazardous waste manifests from the 1980s indicate that solvents existed on the Jervis B. Webb Co. property. In 1986, approximately 1,500 pounds of soil contaminated with oil and solvents was transported offsite; in 1988, 385 gallons of waste 1,1,1-trichloroethane (1,1,1-TCA) was transported offsite; and in 1989, 385 gallons of oil based paints containing chlorinated solvents was transported offsite (Ref. 18; Ref. 19; Ref. 20). Additionally, beginning in March 2000 and until October 2001, a soil vapor extraction system, which removed approximately 177 pounds of volatile organic compounds from the soil, primarily TCE, was operated on the Jervis B. Webb Co. property (Ref. 30, p.1).

As part of the 1997 Phase II soil investigation conducted on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property, 69 soil samples were collected from 18 locations at depths ranging from 5.5 feet to 53.5 feet bgs. A 19th location was sampled but not analyzed (Ref. 10, pp. 6, 31, 32). Soil samples were collected in the areas of the former clarifier, the former hazardous substance storage area, and within the manufacturing building adjacent to the sumps, furnace pit and anodizing area (Ref. 9, p. 5; Ref. 10, pp. 31, 32, 36).

Soil samples indicated that TCE and PCE were detected at maximum concentrations of 270 mg/kg and 140 mg/kg, respectively, in one sample collected at approximately 20 feet bgs beneath the former clarifier (Ref. 10, pp. 19-20). Sample locations are presented in Figure A-3 of the HRS documentation record.

As part of the 1998 Phase II ground water investigation conducted on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property, additional soil samples were collected and analyzed during the installation of the ground water wells (Ref. 11, pp. 5, 8). Soil borings were completed at three locations prior to being converted into ground water monitoring wells (MW-1, MW-2, and MW-3) (Ref. 11, p. 9). Nine soil samples were collected from the three borings at depths of approximately 10 feet bgs, 20 feet bgs, and 30 feet bgs (Ref. 11, pp. 13, 14).

Analytical results indicated that PCE and TCE were detected in soil samples collected from soil boring MW-1 at maximum concentrations of 23 micrograms per kilogram (ug/kg) and 62 ug/kg, respectively (Ref. 11, p. 14). Sample locations are presented in Figure A-3 of the HRS documentation record.

Source Containment

Release to ground water:

A site reconnaissance conducted in February 2011 showed that although the Jervis B. Webb Co. property is mostly paved, the pavement is in poor condition and contains multiple cracks (Ref. 15, pp. 1, 2). In addition, during the 1997 and 1998 sampling events, there was no evidence that a liner or engineered cover were present at or beneath the ground surface (Ref. 10, pp. 56-91; Ref. 11 pp. 29-43). Precipitation could infiltrate the contaminated soil beneath the pavement (Ref. 15, pp. 1, 2). Therefore, a containment factor value of 10 is assigned (Ref. 1 Sections 2.2.3 and 3.1.2.1 and Table 3-2).

2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE

1997 Phase II Soil Investigation

On October 28, December 2 and December 3, 1997, a Phase II soil investigation was conducted on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property. Sixty-nine soil samples were collected at various depths from 18 locations. A 19th location was sampled but not analyzed. All samples were analyzed for VOCs either using EPA Methods 8260 and/or 8010 (Ref. 10, pp. 14, 31, 32).

Soil borings were completed using a soil sampling probe. The soil probe utilized a 2-foot long by 1.5-inch outer diameter soil sampler and 1.5-inch outer diameter probe sections. The soil sampler, containing four pre-cleaned, 6-inch brass liners, was driven approximately 24 inches into undisturbed soil at each sampling interval, then retrieved and disassembled. One of two sample liners was retained for laboratory chemical analysis at each sampling interval. The ends of the brass tube containing each sample were covered with Teflon sheets and capped with plastic end caps. All samples were sealed in sealable plastic bags. Sample containers were closed as soon as they were filled, immediately labeled, and placed on ice for shipment to the laboratory (Ref. 10, pp. 15, 16).

The table presented below is a sample description table with the background samples corresponding with the comparative contaminated source samples. Sample locations are shown on Figure A-3 of the HRS documentation record.

Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Description	References
<i>Background Samples</i>				
B12-6	6	10/28/1997	Dark grayish brown silty sand, fine grained sand, micaceous, medium dense, moist	Ref. 10, p. 69
B13-6	6	10/28/1997	Dark grayish brown silty sand, fine grained sand, micaceous, loose, moist	Ref. 10, p. 70
<i>Comparative Contaminated Samples</i>				
B1-11	11	10/28/1997	Very dark grayish brown sandy silt with clay, fine grained sand, slightly plastic, low toughness, soft to firm, moist	Ref. 10, p. 56
B3-11	11	10/28/1997	Very dark grayish brown sandy silt with clay, fine grained sand, slightly plastic, low toughness, soft to firm, moist.	Ref. 10, p. 59
B4-16	16	10/28/1997	Dark grayish brown clayey silt, moderate plasticity, low toughness, soft to firm, moist	Ref. 10, pp. 60-61
B4-20.5	20.5	10/28/1997	Dark gray clayey silt, moderate plasticity, low toughness, soft to firm, moist	Ref. 10, pp. 60-61
B5-10.5	10.5	10/28/1997	Dark olive brown silty sand, fine grained sand, micaceous, loose, moist	Ref. 10, p. 62
B6-6	6	10/28/1997	Dark grayish brown silty sand, fine grained sand, micaceous, medium dense, moist	Ref. 10, p. 63
B15-26.5	26.5	12/2/1997	Dark grayish brown clay, micaceous, medium to high plasticity, soft to firm, moist to wet.	Ref. 10, pp. 72-73
B15-31	31	12/2/1997	Dark grayish brown clay, micaceous, medium to high plasticity, soft to firm, moist to wet.	Ref. 10, pp. 72, 74
B15-35.5	35.5	12/2/1997	Light brownish gray sand, fine to medium grained, poorly sorted, dense, moist	Ref. 10, pp. 72, 74
B15-40	40	12/2/1997	Gray sand, fine grained, poorly sorted, dense, wet	Ref. 10, pp. 72, 74
B15-44.5	44.5	12/2/1997	Dark grayish brown, clayey silt, fine grained sand, dense	Ref. 10, pp. 72, 74
B16-41	41	12/2/1997	Dark gray sandy silt, fine grained sand, micaceous, firm, wet	Ref. 10, pp. 76, 78
B16-46	46	12/2/1997	Dark gray clayey silt, fine grained sand, slightly plastic, firm, wet	Ref. 10, pp. 76, 78-79
B16-51	51	12/2/1997	Dark gray sandy silt, fine grained sand, micaceous, firm, moist	Ref. 10, pp. 76, 79
B17-36	36	12/3/1997	Dark gray sandy silt, fine grained sand, micaceous, firm, wet	Ref. 10, pp. 80, 82

Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Description	References
<i>Comparative Contaminated Samples (continued)</i>				
B17-41	41	12/3/1997	Dark gray clayey silt, fine grained sand, slightly plastic, firm, wet	Ref. 10, pp. 80, 82
B17-46	46	12/3/1997	Dark gray sandy silt, fine grained sand, micaceous, firm, wet, size of sand grains increases to fine to medium grained	Ref. 10, pp. 80, 82-83
B17-53.5	53.5	12/3/1997	Dark gray sandy silt, medium grained sand, micaceous, firm, wet, size of sand grains increases to fine to medium grained	Ref. 10, pp. 80, 83
B18-11	11	12/3/1997	Grayish brown clayey silt, fine grained sand, slightly plastic, firm, moist	Ref. 10, p. 84
B18-16	16	12/3/1997	Dark grayish brown and mottled with light brownish gray clayey silt, fine grained sand, slightly plastic, firm, moist	Ref. 10, pp. 84-85
B18-21	21	12/3/1997	Dark grayish brown clayey silt, fine grained sand, slightly plastic, firm, moist	Ref. 10, pp. 84-85
B18-27.5	27.5	12/3/1997	Grayish brown clay, medium to high plasticity, firm, moist	Ref. 10, pp. 84-85
B18-31	31	12/3/1997	Dark gray clayey silt, fine grained sand, micaceous, slightly plastic, firm, moist	Ref. 10, pp. 84, 86
B18-41	41	12/3/1997	Gray silty sand, fine grained sand, dense, moist to wet	Ref. 10, pp. 84, 86
B18-46	46	12/3/1997	Gray silty sand, fine grained sand, dense, wet to saturated	Ref. 10, pp. 84, 86-87
B19-16	16	12/3/1997	Grayish brown sandy silt, fine grained sand, micaceous, dense, moist	Ref. 10, pp. 88-89
B19-21	21	12/3/1997	Grayish brown sandy silt, fine grained sand, micaceous, dense, moist	Ref. 10, pp. 88-89
B19-26	26	12/3/1997	Grayish brown sandy silt, fine grained sand, micaceous, dense, moist	Ref. 10, pp. 88-89
B19-31	31	12/3/1997	Dark gray clayey silt, fine grained sand, micaceous, slightly plastic, firm, wet	Ref. 10, pp. 88, 90
B19-36.5	36.5	12/3/1997	Light grayish brown sand, fine to medium grained sand, well sorted, dense, moist	Ref. 10, pp. 88, 90
B19-41	41	12/3/1997	Gray silty sand, fine grained sand, dense, moist to wet	Ref. 10, pp. 88, 90
B19-46	46	12/3/1997	Gray silty sand, fine grained sand, dense, moist to wet	Ref. 10, pp. 88, 90-91

Summarized below is analytical evidence of contamination in source samples associated with the Jervis B. Webb Co. property.

Background Concentrations

Source samples were compared to the background samples collected during the respective sampling event. Samples B12-6 and B13-6 were located in the northwest portion of the facility, in the former shipping area (Ref. 10, pp. 31, 36; Figure A-3 of the HRS documentation record). The background sample locations are not in areas believed to be influenced by site activities. In addition, the samples were not collected from areas where a potential alternative source could

exist (Ref. 10, p. 36, 47-49; Figure A-3 of the HRS documentation record). Both samples were collected at approximately 6 feet bgs (Ref. 10, p. 31).

Sample ID	Sample Depth (ft bgs)	Sample Date	Hazardous Substance	Concentration (mg/kg) ¹	MDL (mg/kg)	References
B12-6	6	10/28/1997	TCE	< 0.0025	0.0025	Ref. 10, pp. 31, 150, 158
			PCE	< 0.0025	0.0025	
B13-6	6	10/28/1997	TCE	< 0.0025	0.0025	Ref. 10, pp. 31, 150, 158
			PCE	< 0.0025	0.0025	

Notes:

¹: 1.0 microgram per kilogram (ug/kg) = 0.001 milligrams per kilogram

ft bgs: feet below ground surface

MDL: Method Detection Limit

mg/kg: milligrams per kilogram

Source Samples

On October 28, December 2 and December 3, 1997, a Phase II soil investigation was conducted on the Jervis B. Webb Co. property. A total of 69 soil samples were collected from 18 locations at depths ranging from 5.5 feet to 53.5 feet bgs. Multiple soil samples detected TCE and PCE at concentrations above the background concentrations shown above (Ref. 10, pp. 31, 32, 36; Figure A-3 of the HRS documentation record).

Sample ID	Sample Depth (ft bgs)	Sample Date	Hazardous Substance	Concentration (mg/kg) ¹	MDL (mg/kg)	References
B1-11	11	10/28/1997	PCE	0.13	0.0025	Ref. 10, pp. 31, 148, 156
B3-11	11	10/28/1997	PCE	0.12	0.005	Ref. 10, pp. 31, 156, 161
B4-16	16	10/28/1997	PCE	2.2	0.0025	Ref. 10, pp. 31, 149, 156
B4-20.5	20.5	10/28/1997	TCE	270	0.005	Ref. 10, pp. 31, 156, 161
			PCE	140	0.005	
B5-10.5	10.5	10/28/1997	TCE	0.19	0.005	Ref. 10, pp. 31, 157, 162
B6-6	6	10/28/1997	PCE	0.13	0.0025	Ref. 10, pp. 31, 149, 157
B15-26.5	26.5	12/2/1997	TCE	0.38	0.005	Ref. 10, pp. 31, 173, 199
B15-31	31	12/2/1997	TCE	0.52	0.005	Ref. 10, pp. 31, 174, 199
B15-35.5	35.5	12/2/1997	TCE	0.14	0.005	Ref. 10, pp. 31, 174, 199
B15-40	40	12/2/1997	TCE	1.2	0.005	Ref. 10, pp. 31, 175, 199
B15-44.5	44.5	12/2/1997	TCE	1.3	0.005	Ref. 10, pp. 31, 175, 199
B16-41	41	12/2/1997	TCE	0.41	0.005	Ref. 10, pp. 31, 179, 200
B16-46	46	12/2/1997	TCE	0.39	0.005	Ref. 10, pp. 31, 180, 200
B16-51	51	12/2/1997	TCE	1.3	0.005	Ref. 10, pp. 32, 180, 200

Sample ID	Sample Depth (ft bgs)	Sample Date	Hazardous Substance	Concentration (mg/kg) ¹	MDL (mg/kg)	References
B17-36	36	12/3/1997	TCE	1.4	0.005	Ref. 10, pp. 32, 184, 201
B17-41	41	12/3/1997	TCE	1.2	0.005	Ref. 10, pp. 32, 184, 201
B17-46	46	12/3/1997	TCE	1.6	0.005	Ref. 10, pp. 32, 185, 201
B17-53.5	53.5	12/3/1997	TCE	1.4	0.005	Ref. 10, pp. 32, 185, 201
B18-11	11	12/3/1997	TCE	0.11	0.005	Ref. 10, pp. 32, 186, 202
			PCE	0.4	0.005	
B18-16	16	12/3/1997	TCE	0.61	0.005	Ref. 10, pp. 32, 186, 202
			PCE	0.37	0.005	
B18-21	21	12/3/1997	TCE	16	0.005	Ref. 10, pp. 32, 187, 202
			PCE	0.66	0.005	
B18-27	27	12/3/1997	TCE	0.75	0.005	Ref. 10, pp. 32, 187, 202
B18-31	31	12/3/1997	TCE	2.0	0.005	Ref. 10, pp. 32, 188, 202
			PCE	0.14	0.005	
B18-41	41	12/3/1997	TCE	2.3	0.005	Ref. 10, pp. 32, 189, 202
B18-46	46	12/3/1997	TCE	8.7	0.005	Ref. 10, pp. 32, 189, 202
			PCE	0.18	0.005	
B19-16	16	12/3/1997	TCE	0.2	0.005	Ref. 10, pp. 32, 190, 202
			PCE	0.42	0.005	
B19-21	21	12/3/1997	TCE	1.8	0.005	Ref. 10, pp. 32, 190, 202
			PCE	0.28	0.005	
B19-26	26	12/3/1997	TCE	1.5	0.005	Ref. 10, pp. 32, 191, 203
			PCE	0.28	0.005	
B19-31	31	12/3/1997	TCE	1.2	0.005	Ref. 10, pp. 32, 191, 203
			PCE	0.25	0.005	
B19-36.5	36.5	12/3/1997	TCE	0.11	0.005	Ref. 10, pp. 32, 192, 203
B19-41	41	12/3/1997	TCE	4.0	0.005	Ref. 10, pp. 32, 192, 203
			PCE	0.16	0.005	
B19-46	46	12/3/1997	TCE	4.3	0.005	Ref. 10, pp. 32, 193, 203
			PCE	0.18	0.005	

Notes:

¹: 1.0 microgram per kilogram (ug/kg) = 0.001 milligrams per kilogram
ft bgs: feet below ground surface
MDL: Method Detection Limit
mg/kg: milligrams per kilogram

1998 Phase II Ground Water Investigation

In February 1998, a Phase II ground water investigation was conducted on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property. The ground water investigation included the installation of onsite monitoring wells. As part of the investigation, soil was collected from the monitoring well boreholes prior to the construction of the wells. Nine soil samples were collected at various depths from three locations. All samples were analyzed for VOCs using EPA Method 8010 (Ref. 11, pp. 5, 9, 13, 22).

Soil borings were completed using a hollow-stem auger drilling rig and utilized 10.25-inch outer diameter augers. Soil samples were collected using a 1.5-foot long by 2-inch outer-diameter, split-spoon sampler. The soil sampler, containing four pre-cleaned, 6-inch brass liners, was driven approximately 18 inches into undisturbed soil at each sampling interval, then retrieved and disassembled. One of two sample liners was retained for laboratory chemical analysis at each sampling interval. The ends of the brass tube containing each sample were covered with polytetrafluoroethylene sheets and capped with plastic end caps. All samples were sealed in sealable plastic bags. Sample containers were closed as soon as they were filled, immediately labeled, and placed on ice for shipment to the laboratory (Ref. 11, pp. 9, 10).

The table presented below contains sample descriptions of soil background samples and comparative contaminated soil source samples.

Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Description	References
<i>Background Samples</i>				
MW-2-10.5	10.5	2/26/98	Dark grayish brown sandy silt, fine grained sand, micaceous, moist.	Ref. 11, pp. 22, 34, 52
MW-2-20.5	20.5	2/26/98	Gray with dark yellowish brown streaks clay, high plasticity, low toughness, soft to firm, moist.	Ref. 11, pp. 22, 34-35, 52
MW-2-30.5	30.5	2/26/98	Dark grayish brown sandy silt, fine grained sand, micaceous, non-plastic, firm, moist.	Ref. 11, pp. 22, 34, 36, 52
<i>Comparative Contaminated Samples</i>				
MW-1-10.5	10.5	2/24/98	Dark grayish brown sandy silt, fine grained sand, micaceous, non-plastic, firm, moist.	Ref. 11, pp. 22, 29, 51
MW-1-20.5	20.5	2/24/98	Not noted	Ref. 11, pp. 22, 29-30, 51
MW-1-30.5	30.5	2/24/98	Dark grayish brown sandy silt, fine grained sand, micaceous, non-plastic, firm, moist.	Ref. 11, pp. 22, 29, 31, 51

Summarized below is analytical evidence of contamination in source samples associated with the Jervis B. Webb Co. property.

Background Concentrations

The ground water investigation included the installation of onsite monitoring wells. As part of the investigation, soil was collected from the monitoring well boreholes prior to the construction of the wells. Source samples were compared to the background samples collected during the respective sampling event. Samples MW-2-10.5, MW-2-20.5 and MW-2-30.5 were collected in the northwest portion of the facility, north of the former shipping area (Ref. 10, p. 36; Ref. 11, pp. 22, 26). The background sample location is not in an area believed to be influenced by site activities. In addition, the samples were not collected from areas where a potential alternative source could exist (Ref. 10, pp. 36, 47-49; Ref. 11, pp. 22, 26; Figure A-3 of the HRS documentation record).

Sample ID	Sample Depth (ft bgs)	Sampling Date	Hazardous Substance	Concentration (ug/kg)	MDL (ug/kg)	References
MW-2-10.5	10.5	2/26/98	TCE	< 5.0	5.0	Ref. 11, pp. 22, 48, 52
			PCE	< 5.0	5.0	
MW-2-20.5	20.5	2/26/98	TCE	< 5.0	5.0	Ref. 11, pp. 22, 48, 52
			PCE	< 5.0	5.0	
MW-2-30.5	30.5	2/26/98	TCE	< 5.0	5.0	Ref. 11, pp. 22, 48, 52
			PCE	< 5.0	5.0	

Notes:

ft bgs: feet below ground surface
MDL: Method Detection Limit
ug/kg: micrograms per kilogram

Source Samples

In February 1998, a Phase II ground water investigation was conducted on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property. A total of 9 soil samples were collected from 3 locations at depths ranging from 10.5 feet to 30.5 feet bgs. Soil samples collected from boring MW-1 detected TCE and PCE at concentrations above background concentrations (Ref. 11, pp. 22, 26).

Sample ID	Sample Depth (ft bgs)	Sampling Date	Hazardous Substance	Concentration (ug/kg)	MDL (ug/kg)	References
MW-1-10.5	10.5	2/24/98	TCE	18	5.0	Ref. 11, p. 22, 47, 51
			PCE	21	5.0	
MW-1-20.5	20.5	2/24/98	TCE	62	5.0	Ref. 11, p. 22, 47, 51
			PCE	23	5.0	
MW-1-30.5	30.5	2/24/98	TCE	60	5.0	Ref. 11, p. 22, 47, 51
			PCE	11	5.0	

Notes:

ft bgs: feet below ground surface
MDL: Method Detection Limit
ug/kg: micrograms per kilogram

2.4.2. Hazardous Waste Quantity

Tier A: Hazardous Constituent Quantity - Not Evaluated (NE)

The information available is not sufficient to meaningfully evaluate Tier A, hazardous constituent quantity; therefore it is not possible to adequately determine a hazardous constituent quantity for Source 1 (Ref. 1, Section 2.4.2.1.1). Scoring proceeds to the evaluation of Tier B, Hazardous Wastestream Quantity, Ref. 1, Section 2.4.2.1.2 (Ref. 1, Section 2.4.2.1.1).

Hazardous Constituent Quantity Value: NE

Tier B: Hazardous Wastestream Quantity

The information available is not sufficient to meaningfully evaluate Tier B, hazardous wastestream quantity; therefore it is not possible to adequately determine a hazardous wastestream quantity for Source 1 (Ref. 1, Section 2.4.2.1.2). Scoring proceeds to the evaluation of Tier C, Volume, Ref. 1, Section 2.4.2.1.3 (Ref. 1, Section 2.4.2.1.2).

Hazardous Wastestream Quantity Value: NE

Tier C: Volume

The information available is not sufficient to meaningfully evaluate Tier C, volume; therefore it is not possible to adequately determine a volume for Source 1 (Ref. 1, Section 2.4.2.1.3). Scoring proceeds to the evaluation of Tier D, Area, Ref. 1, Section 2.4.2.1.4 (Ref. 1, Section 2.4.2.1.3).

Volume Assigned Value: 0

Tier D: Area

The area of contaminated soil is unknown, but greater than 0. Analytical results of the 1997 and 1998 soil sampling efforts indicate the presence of contaminated soil on the Jervis B. Webb Co. property (Ref. 1, Section 2.4.2.1.4; Ref. 10, pp. 31, 32, 36; Ref. 11, pp. 22, 26; Figure A-3 of the HRS documentation record).

Area Assigned Value: >0

Source Hazardous Waste Quantity Value

According to the HRS, the highest of the values assigned to the source for Hazardous constituent quantity (Tier A), Hazardous wastestream quantity (Tier B), Volume (Tier C), and Area (Tier D) should be assigned as the source hazardous waste quantity value (Ref. 1, Section 2.4.2.1.5).

Tier Evaluated	Source 1 Values
A	NE
B	NE
C	0
D	>0*

Note:

* Value selected for the source hazardous waste quantity value, according to the HRS.
NE = Not Evaluated.

Source Hazardous Waste Quantity Value: >0

SITE SUMMARY OF SOURCE DESCRIPTIONS

Source No.	Source Hazardous Waste Quantity Value	Containment			
		Ground Water	Surface Water	Gas	Air Particulate
1	>0	10	NE	NE	NE
TOTAL	>0				

Notes:

NE = Not Evaluated.

POSSIBLE SOURCES NOT SCORED

- Clarifier. A former clarifier used during Blake Rivet Company operations was located in the northeast portion of the Jervis B. Webb Co. property (Ref. 10, p. 47; Figure A-2 of the HRS documentation record). The three stage clarifier was approximately 4-feet wide by 8-feet long and approximately 4-feet deep. The structure was set in a concrete pad that rose approximately six inches above the surrounding asphalt area. During the 1997 Phase II investigation conducted on the Jervis B. Webb Co. property, the sample collection box of the clarifier was observed to be filled with concrete and the main chambers were filled with sand and covered with steel plates. During Jervis B. Webb Co. operations, the area was used for temporary storage of drums of hazardous materials (Ref. 10, pp. 6, 47).
- Anodizing Area. A former anodizing area was located on the southeast side of the building located on the 5030 Firestone Blvd. property (Ref. 10 pp. 47-48; Figure A-2 of the HRS documentation record). Operations conducted by the Blake Rivet Company from the 1950s until approximately 1980, included manufacturing aircraft rivets, which generated wastewater that was discharged to the aforementioned clarifier and a sanitary sewer (Ref. 10, p.6). An L-shaped floor drainage trench, approximately 2-inches to 6-inches deep and sloped toward a drain at the southwest end of the trench, was present along the northeasterly and southeasterly walls of the building. The trench drain lead underground to the clarifier (see previous bullet). During the 1997 Phase II investigation conducted on the Jervis B. Webb Co. property, concrete in the area of the trench and anodizing area was observed to be severely etched, broken, and/or cracked (Ref. 10, p. 48).
- Sumps. One sump was located in the central portion of the building on the 5030 Firestone Blvd. property (Ref. 10, p. 49; Figure A-2 of the HRS documentation record). The recessed sump was approximately 2 feet wide by 4 feet long and 6 inches deep. Due to the structure being shallow, it was assumed in previous investigations that it was not used for liquid storage (Ref, 10, p. 49). Another sump was identified along the eastern portion of the building (Ref. 10, p. 49; Figure A-2 of the HRS documentation record). The sump was 2 feet wide and 4 feet long and was observed during the 1997 Phase II investigation to be filled with sand (Ref. 10, p. 49).

3.0 GROUND WATER MIGRATION PATHWAY

3.0.1 GENERAL CONSIDERATIONS

The Jervis B. Webb Co. facility is located in the Central Basin Pressure Area of the Central Basin of the Los Angeles Coastal Plain (Ref. 3; Ref. 21, p. 1 Ref. 22, pp. 130, 166, Plate 2; Ref. 23, pp. 32, 33; Figure A-1 of the HRS documentation record). Ground water is found in the Recent Alluvium, Lakewood Formation, and San Pedro Formation (Ref. 22, p. 188; Ref. 23, p. 33). Geologic materials in the unsaturated zone of the Recent Alluvium, between ground surface and the top of the Lakewood Formation are primarily composed of sandy silts to silty clays and have been described as correlating with the Bellflower Aquiclude (Ref. 16, pp. 8, 101 - 103; Ref. 22, pp. 168, 169, Plate 6A). An aquiclude is defined as a subsurface rock, soil, or sediment unit that does not yield useful quantities of water (Ref. 26, p. 1). Interbedded within the Bellflower Aquiclude are discontinuous lenses of silty-sands that may allow for the presence of one or more perched aquifers. The groundwater flow direction within these perched aquifers is sensitive to lithologic variations, groundwater extraction, and/or surface water recharge (Ref. 16, p. 8, 10; Ref. 21, pp. 1-3; Ref. 22, p. 168).

In the South Gate area, shallow ground water occurs at a depth of approximately 45 feet bgs, with a ground water flow direction to the south or southeast. Shallow ground water beneath the Jervis B. Webb Co. property is expected to be similar to the nearby Cooper Drum Company property, where it occurs within or is controlled by the near surface Bellflower Aquiclude, which incorporates the Semi-perched Aquifer (Ref. 16, p. 8; Ref. 23, pp. 18-19). In the vicinity of the facility, the Lakewood Formation, which immediately underlies the Recent Alluvium, consists of the Gaspar Aquifer, Exposition Aquifer, an unnamed aquiclude, and the Gage Aquifer. Ground water flow within the Gaspar Aquifer is generally to the south beneath the Jervis B. Webb Co. facility (Ref. 16, pp. 70 - 72). Although data are not adequate to document ground water flow within the Exposition and Gage aquifers, it is assumed that the flow direction would be generally towards the south, in the direction of the Pacific Ocean (Ref. 11, p. 6-7; Ref. 21, p. 2). The San Pedro Formation, which underlies the Lakewood Formation, consists of the Hollydale, Jefferson, Lynwood, Silverado, and Sunnyside aquifers with intervening aquitards [Ref. 22, pp. 182, 183, 184, Plate 6A (Geologic Section B-B'); Figures A-1 and A-2 of the HRS documentation record]. The main hydrogeologic features identified beneath the Jervis B. Webb Co. facility include the Bellflower Aquiclude, the Semi-perched aquifer, and the Gaspar, Exposition, and Gage Aquifers. These latter units constitute a shallow aquifer and two deeper aquifers, respectively. (Ref. 16, p. 8; Ref. 22, p. 182; Ref. 23, p. 19; Figures A-1 and A-2 of the HRS documentation record).

It appears that the Lakewood and San Pedro formations may not be in hydraulic continuity within 2 miles of the source at the Jervis B. Webb Co. site [Ref. 22, p. 166, Plates 3A, 6A (Geologic Section B-B'), 6E (Geologic Section L-L'); Ref. 28 pp. 1-2]. In the late 1950s, the State of California Department of Water Resources, Southern District (DWR), compiled 50 geologic sections for the Los Angeles Coastal Plain (Ref. 22, pp. 2, 3, 20). The geologic sections were compiled in order to complete a geologic picture of the Coastal Plain of Los Angeles County. These sections are based on electric logs and drillers' logs from approximately 200 oil wells and 3,500 water wells (Ref. 22, p. 20). Examination of DWR geologic sections B-B' and L-L' suggests that the lowermost aquifer in the Lakewood Formation (i.e., the Gage Aquifer) is separated from the uppermost aquifer in the San Pedro Formation (i.e., the Hollydale Aquifer) by a laterally continuous lower permeability layer in the vicinity of the property [Ref.

22, p. 166, Plates 3A, 6A (Geologic Section B-B'), 6E (Geologic Section L-L'); Figures A-1 and A-2 of the HRS documentation record]. Interconnections between the Semi-perched, Gaspur, Exposition, and Gage aquifers is established within 2 miles of the source at the site and therefore are eligible to be scored as one interconnected aquifer (Ref. 1, Section 3.0.1.2.1; Ref. 11, pp. 29 – 38; Ref. 22, Plates 3A, 6A, and 6E; Section 3.0.1, Figures A-1 and A-2 of the HRS documentation record). Since data are not adequate to establish aquifer interconnection between the Lakewood and San Pedro formations within 2 miles of the source at the Jervis B. Webb Co. site and an observed release is documented to the Semi-perched, Gaspur, Exposition, and Gage Aquifers [see Section 3.1.1 (Observed Release) of this HRS documentation record], the following hydrogeologic discussion is limited to those strata that have been identified in the Recent Alluvium and Lakewood Formation.

- **Stratum 1: Bellflower Aquiclude and Semi-Perched Aquifer**

The Bellflower Aquiclude extends from the surface to a depth of approximately 55 to 70 feet bgs and consists of sandy silts, clayey silts, and lesser amounts of silty clay. The semi-perched aquifer is present within the Bellflower Aquiclude. Water levels are generally found in a laterally continuous 5-foot-thick silty/sandy unit at approximately 35 to 40 feet bgs, which is underlain by finer materials of the Bellflower Aquiclude (Ref. 16, p. 8; Ref. 23, pp. 34, 35). The Bellflower Aquiclude does not restrict ground water movement between the strata composing the aquifer (Ref. 11, pp. 29 – 38; Ref. 22, pp. 72, 73, 77, 168, 184, 185).

- **Stratum 2: Gaspur Aquifer**

The shallow aquifer is represented by the Gaspur Aquifer which underlies the Bellflower Aquiclude and extends to a depth of approximately 110 to 120 feet bgs. The Gaspur Aquifer is of fluvial origin and occurs within an ancestral Los Angeles River channel. The Gaspur Aquifer consists of sandy units varying from very fine to medium and coarse and to a lesser extent finer units comprising silty sand and sandy silt. Water level in the Gaspur Aquifer is generally at a depth that corresponds to the Lower Bellflower Aquiclude, suggesting the Gaspur Aquifer is a semi-confined aquifer (Ref. 16, p. 8; Ref. 23, p. 34). The horizontal flow direction in the Gaspur Aquifer is toward the south (Ref. 16, p. 9).

- **Stratum 3: Exposition Aquifer**

The Exposition Aquifer, which underlies the Gaspur Aquifer, begins at a depth of approximately 110 to 120 feet bgs (Ref. 16, p. 8). The maximum thickness of the Exposition Aquifer is 100 feet and is reportedly related to the ancestral Los Angeles River drainage system. Materials range in size from coarse gravels to clay, with the fine deposits separating the lenticular sandy and gravelly beds. The upper coarse members of the Exposition appear to have been either eroded and backfilled by the overlying Gaspur Aquifer deposits, or some of the upper members were deposited contemporaneously with the formation of the younger Gaspur Aquifer (Ref. 23, p. 34).

- **Stratum 4: Unnamed Aquiclude**

Based on DWR Geologic Section B-B', a lower permeability layer underlies the Exposition Aquifer beneath the Jervis B. Webb Co. facility. It extends from approximately 160 feet bgs to 200 feet bgs [Ref. 22, Plates 3A, 6A (Geologic Section B-B'); Figures A-1 and A-2 of the HRS

documentation record].

- **Stratum 5: Gage Aquifer**

The Gage Aquifer generally consists of fine-grained sand and silty sand in the Central Basin Pressure Area (Ref. 22, pp. 183, 184). This aquifer underlies the unnamed aquiclude and extends from 200 feet bgs to 275 feet bgs beneath the Jervis B. Webb Co. facility [Ref. 22, Plates 3A, 6A (Geologic Section B-B')].

- **Aquifer Interconnection**

Interconnection between the Semi-Perched, Gaspar, Exposition, and Gage aquifers is established within 2 miles of Source 1 at the site as follows (Ref. 1, Section 3.0.1.2.1):

- Contamination has been documented in monitoring well MW-1, located on the Jervis B. Webb Co. property (Ref. 11, pp. 15-16, 72, 74, 77, 82). Examination of DWR Geologic Section B-B', indicates that the edge of the Gaspar Aquifer occurs at approximately 50 feet bgs in the vicinity of 2S/12W-31L1 (Ref. 22, Plate 6A). Monitoring well MW-1 is screened within the Gaspar Aquifer (Ref.11 pp. 6, 21, 23, 29-33; Ref.16, p. 8; Ref. 22, Plates 3A and 6A; Ref.23, p. 34). This supports that the Bellflower Aquiclude and Semi-perched Aquifer are interconnected to the underlying formations (i.e., Lakewood Formation) since contaminants have passed through to the lower aquifers.
- An examination of DWR Geologic Sections B-B' and L-L' indicates that the Gaspar Aquifer is in direct contact with the Exposition Aquifer in the site vicinity (Ref. 22, Plates 3A, 6A, and 6E; Figures A-1 and A-2 of the documentation record).
- An examination of DWR Geologic Section B-B' indicates that the unnamed aquiclude between the Exposition and Gage aquifers is not continuous within 2 miles of the source at the Jervis B. Webb Co. site. This aquiclude is shown as pinching out approximately 1,500 feet to the west of the property, resulting in a merging of the two aquifers [Ref. 1, Section 3.0.1.2.1; Ref. 22, Plates 3A and 6A (Geologic Section B-B'); Figures A-1 and A-2 of the HRS documentation record].

- **Aquifer Discontinuities**

An examination of DWR Plate 3A indicate that the Jervis B. Webb Co. facility is located between Geologic Sections B-B' and C-C' that run generally southwest-northeast, and between Geologic Sections K-K' and L-L' that run generally northwest-southeast (Ref. 22, Plate 3A). An examination of Geologic Sections B-B', C-C', K-K' and L-L' show that there are no aquifer discontinuities between the Semi-Perched and Gage aquifers within 4 miles of Source 1 at the Jervis B. Webb Co. site (Ref. 1, Section 3.0.1.2.2; Ref. 22, Plate 6A, Plate 6B, Plate 6E; Ref. 28, pp. 1-2; Figures A-1 and A-2 of the HRS documentation record).

SUMMARY OF AQUIFER BEING EVALUATED

Aquifer No.	Aquifer Name	Is Aquifer Interconnected with Upper Aquifer within 2 miles? (Y/N/NA)	Is Aquifer Continuous within 4-mile TDL? (Y/N)	Is Aquifer Karst? (Y/N)
1	Semi-Perched/Gaspur/Exposition/Gage	Y	Y	N

Notes:

Y: Yes
N: No
NA: Not applicable

3.1 LIKELIHOOD OF RELEASE

3.1.1 OBSERVED RELEASE

Aquifer Being Evaluated: Semi-Perched/Gaspur/Exposition/Gage

Chemical Analysis

Jervis B. Webb Co. 1998 Phase II Ground Water Sampling

In 1998, ground water sampling was conducted as part of the Phase II investigation on the Jervis B. Webb Co. property. Ground water monitoring wells were installed and sampled at three locations on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property. The ground water monitoring wells were screened within the Gaspur Aquifer. All samples were analyzed for VOCs using EPA Method 8260 (Ref. 11, p. 6, 8, 15, 21, 23, 29-43; Ref. 16, p. 8; Ref. 23, p. 34; Section 3.1 (Attribution) of the HRS documentation record).

Ground water sample locations are shown in Figure A-3 and Reference 11, page 26.

- Background Concentrations:

Background levels for site-related VOC hazardous substances are established below based on the analytical results from ground water collected from monitoring well MW-2. Monitoring well MW-2 is located in the northern portion of the Jervis B. Webb Co. property, adjacent to Firestone Boulevard (Ref. 11, p. 26).

Monitoring well MW-2 is upgradient of the contaminated ground water samples listed below. Data from the contaminated ground water samples are compared to background samples collected using the same sampling methodology. Starting in February 1998, three ground water monitoring wells (MW-1, MW-2 and MW-3) were drilled on the Jervis B. Webb Co. property (Ref. 11, p. 9). Upon completion of the boreholes, threaded, pre-cut well materials were assembled and inserted into the boreholes within the hollow-stem augers. Installation of filter packs and seal materials for the wells were then completed (Ref. 11, pp. 10, 29-43). On March 2, 1998, ground water monitoring wells were developed by bailing sediment from the bottom of the well, surging, and continued bailing until the sediment content of extracted well water was below approximately 2 mL/L of water by volume. The screened interval of each well was surged using a surge block and rod attached to a cable and pulley operating from the extended tower of the development rig. After bailing and surging, the wells were purged of approximately 5 to 8 casing volumes using a submersible, electric pump. Purging at each well was continued until water quality parameters stabilized to within approximately 10 percent. All down-hole equipment was thoroughly steam cleaned prior to use at each well (Ref. 11, pp. 11, 12, 55-67).

Ground water samples were collected on March 4 and May 20, 1998. Prior to sampling of ground water, each well was purged a minimum of three well-casing volumes using a submersible, electric pump (Ref. 11, pp. 11, 55-67). The March 4 ground water samples were collected using a bottom-emptying bailer, and the May 20 ground water samples were collected using a disposable polyethylene plastic bailer. All samples were collected into pre-preserved volatile organic analysis (VOA) vials, labeled, bagged, and placed in an iced cooler prior to transport to the laboratory (Ref. 11, pp. 12, 55-67).

Well ID	Screened Interval (feet bgs)	Ground Water Elevation (feet above msl)	Date	References
MW-2	40 - 70	62.63	2/27/1998	Ref. 11, p. 21, 23, 57, 61, 63
		62.59	3/2/1998	
		62.52	3/4/1998	
		63.14	5/20/1998	

Sample ID	Sampling Date	Hazardous Substance	Concentration (ug/l)	MDL (ug/l)	References
MW-2-0304	3/4/1998	TCE	2,700	0.5	Ref. 11, p. 71, 74
		PCE	< 0.5	0.5	

Sample ID	Sampling Date	Hazardous Substance	Concentration (ug/l)	MDL (ug/l)	References
MW-2	5/20/1998	TCE	3,000	0.5	Ref. 11, p. 77, 82
		PCE	< 10	0.5	

Notes:

MDL: Method Detection Limit
ug/l: micrograms per liter
bgs: below ground surface
msl: mean sea level

- Contaminated Samples:

The well listed below is located downgradient of Source 1 at the Jervis B. Webb Co. site. For conservative purposes, the higher concentration background levels from the 1998 sampling events (e.g., 3,000 ug/l TCE) are compared to the 1998 contaminated samples in order to establish a release. Well locations are presented in Figure A-3 and Reference 11, page 26.

Well ID	Screened Interval (feet bgs)	Ground Water Elevation (feet above msl)	Date	Reference
MW-1	40 - 70	61.3	2/27/1998	Ref. 11, p. 21, 23, 56, 60, 65
		61.27	3/2/1998	
		61.51	3/4/1998	
		61.52	4/8/1998	
		62.1	5/20/1998	

Sample ID	Sampling Date	Hazardous Substance	Concentration (ug/l)	MDL (ug/l)	References
MW-1-0304	3/4/1998	TCE	24,000	0.5	Ref. 11, p. 72, 74
		PCE	140	0.5	

Sample ID	Sampling Date	Hazardous Substance	Concentration (ug/l)	MDL (ug/l)	References
MW-1	5/20/1998	TCE	24,000	0.5	Ref. 11, p. 77, 82

Notes:

MDL: Method Detection Limit
ug/l: micrograms per liter
bgs: below ground surface
msl: mean sea level

Jervis B. Webb Co. 2005 Annual Ground Water Sampling

In 2005, ground water sampling was conducted as part of the annual ground water sampling conducted on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property. Existing ground water monitoring wells were sampled at five locations on the Jervis B. Webb Co. property (Ref. 30, pp. 1-2, 8). The ground water monitoring wells were screened within the Gaspur Aquifer. All samples were analyzed for VOCs using EPA Method 8260B (Ref. 11 pp. 6, 21, 23, 29-43; Ref. 16, p. 8; Ref. 23, p. 34; Ref. 30, pp. 3, 12-16, 23, 24).

Ground water sample locations are shown in Figure A-3 and Reference 30, page 8.

- Background Concentrations:

Background levels for site-related VOC hazardous substances are established below based on the analytical results from ground water collected from monitoring well MW-2. Monitoring well MW-2 is located in the northern portion of the Jervis B. Webb Co. property, adjacent to Firestone Boulevard (Ref. 30, p. 8).

Monitoring well MW-2 is upgradient of the contaminated ground water sample listed below. Data from the contaminated ground water sample are compared to background samples collected using the same sampling methodology. In June 2005, five ground water monitoring wells (MW-1 through MW-5) were sampled on the Jervis B. Webb Co. property (Ref. 30, pp. 17-19). Ground water samples were collected using passive diffusive bags (PDBs). The PDBs were pre-filled with deionized water and suspended from weighted cables at the target depth in their respective wells. The PDBs remained in the monitoring wells for seven days prior to sampling. At the time of sampling, the PDBs were removed from the wells and ground water samples were collected directly from the PDBs. The ground water samples were collected and containerized in pre-cleaned laboratory supplied bottles. Ground water samples were labeled and placed in an iced cooler prior to transport to the laboratory (Ref. 30, pp. 2-3).

Well ID	Screened Interval (feet bgs)	Ground Water Elevation (feet above msl)	Date	References
MW-2	40 - 70	58.20	6/3/2005	Ref. 11, p. 21; Ref. 30, p. 13, 16

Sample ID	Sampling Date	Hazardous Substance	Concentration (ug/l)	RL (ug/l)	References
MW-2	6/10/2005	TCE	1,865.7	2.5	Ref. 30, pp. 17, 23, 24, 26
		1,1-DCE	<2.5	2.5	
		t-1,2-DCE	10.5	2.5	

Notes:

RL: Reporting Limit
ug/l: micrograms per liter
bgs: below ground surface
msl: mean sea level

Contaminated Samples:

The well listed below is located beneath and downgradient of Source 1 at the Jervis B. Webb Co. facility. Well locations are presented in Figure A-3 and Reference 30, page 8.

Sample ID	Screened Interval (feet bgs)	Ground Water Elevation (feet above msl)	Date	Reference
MW-1	40 - 70	56.43	6/3/2005	Ref. 11, p. 21; Ref. 30, p. 12

Sample ID	Sampling Date	Hazardous Substance	Concentration (ug/l)	RL (ug/l)	References
MW-1	6/10/2005	TCE	24,979	25.0	Ref. 30, pp. 17, 23, 24, 26
		1,1-DCE	239.8	25.0	
		t-1,2-DCE	66.8	25.0	

Notes:

RL: Reporting Limit
ug/l: micrograms per liter
bgs: below ground surface
msl: mean sea level

Attribution

The Jervis B. Webb Co. property is located at 9301 Rayo Avenue and 5030 Firestone Boulevard, South Gate, Los Angeles County, California (Ref. 3; Ref. 5, p. 1; Ref. 6, p. 1; Ref. 7, p. 1; Ref. 9, p. 2). The properties occupy approximately 3.82 acres (Ref. 6, p. 1; Ref. 7, p. 1; Ref. 8, p. 1). The Jervis B. Webb Co. property location is presented in Figure A-1.

Development of the Jervis B. Webb property began in the early 1950s. Prior to that, the land was vacant (Ref. 10, pp. 49, 50). Starting in the 1950s, the Jervis B. Webb Co. operated a custom conveyor and crane manufacturing facility on the 9301 Rayo Avenue property. The manufacturing process consisted of cutting, drilling, assembling, welding, and painting the steel pieces that comprised the final product. Hazardous substances utilized in the manufacturing process included oil-based paints with chlorinated solvents, lacquer paint thinner and 1,1,1-trichloroethane (1,1,1-TCA) (Ref. 9, p. 47; Ref. 20). The 5030 Firestone Boulevard property was occupied by the Blake Rivet Company from the 1950s until approximately 1980 (Ref. 10, p. 6). Operations conducted by the Blake Rivet Company included manufacturing aircraft rivets. The manufacturing process included an above ground anodizing operation that generated wastewater. Wastewater was discharged to a three-stage clarifier and then to a sanitary sewer. Raw materials stored on the property during the Blake Rivet Company's occupation included metal stock and anodizing solutions (Ref. 10, p. 6).

In the South Gate area, shallow ground water occurs at a depth of approximately 45 feet bgs, with a ground water flow direction to the south or southeast. Shallow ground water beneath the Jervis B. Webb Co. property is expected to be similar to the nearby Cooper Drum Company property, where it occurs within or is controlled by the near surface Bellflower Aquiclude, which also incorporates the semi-perched aquifer (Ref. 16, p. 8; Ref. 23, pp. 18-19). In the vicinity of the Jervis B. Webb Co. facility, the Lakewood Formation, which immediately underlies the Recent Alluvium, consists of the Gaspur Aquifer, Exposition Aquifer, an unnamed aquiclude,

and the Gage Aquifer. Ground water flow within the Gaspar Aquifer is generally to the south beneath the Jervis B. Webb Co. facility (Ref. 16, p. 70 - 72). Although data are not adequate to document ground water flow within the Exposition and Gage aquifers, it is assumed that the flow direction would be generally towards the south, in the direction of the Pacific Ocean [Ref. 11, pp. 6-7; Ref. 21, p. 2; Ref. 22, pp. 182, 183, 184, Plate 6A (Geologic Section B-B'); Ref. 28; Figures A-1 and A-2 of the HRS documentation record].

The Cooper Drum Company Superfund Site (EPA ID: CAD055753370) is located at 9316 Atlantic Avenue in South Gate, California (Ref. 12, p. 1). The 3.8 acre facility is located approximately 450 feet southwest, and hydraulically downgradient, of the Jervis B. Webb Co. property (Ref. 4; Ref. 16, pp. 7-8). The Cooper Drum facility activities included drum reconditioning since the 1940s. Contaminants of concern associated with the Cooper Drum facility include TCE and cis-1,2-dichloroethylene (DCE) (Ref. 16, pp. 7-8). The Cooper Drum site was proposed to NPL on January 11, 2001 and received its final listing on NPL on June 14, 2001 (Ref. 12, p. 2). This HRS documentation record is a listing of releases from the Jervis B. Webb Co. site, not from Cooper Drum, that are contributing to a TCE- and PCE-contaminated ground water plume (see Sections 2.2 and 3.0 of this HRS documentation record).

The Seam Master Industries site (EPA ID: CAN000905902) is located at 5211 Southern Avenue in South Gate, California (Ref. 29, p. 1). The facility is located approximately 750 feet south, and hydraulically downgradient, of the Jervis Webb property (Ref. 4; Ref. 11, p. 7; Figure A-3 of the HRS documentation record). Investigations of the Seam Master Industries site have been conducted by EPA due to TCE and cis-1,2-DCE ground water contamination (Ref. 16, p. 21).

The 1998 Phase II soil investigation report established an onsite source at the Jervis B. Webb Co. facility. Analytical results indicated that elevated concentrations of TCE and PCE exist in onsite soils. TCE and PCE were detected at maximum concentrations of 270 mg/kg and 140 mg/kg, respectively, in one sample collected at approximately 20 feet bgs in the vicinity of the former clarifier (Ref. 10, p. 20). Sample locations are presented in Figure A-3.

Hazardous waste manifests from the 1980s indicate that solvents existed on the Jervis B. Webb Co. property. In 1986, approximately 1,500 pounds of soil contaminated with oil and solvents was transported offsite; in 1988, 385 gallons of waste 1,1,1-TCA was transported offsite; and in 1989, 385 gallons of oil based paints containing chlorinated solvents was transported offsite (Ref. 18; Ref. 19; Ref. 20).

A site reconnaissance conducted in February 2011 showed that although the Jervis B. Webb Co. property is mostly paved, the pavement is in poor condition and contains multiple cracks (Ref. 15, pp. 1, 2). In addition, during the 1997 and 1998 sampling events, there was no evidence that a liner or engineered cover were present at or beneath the ground surface (Ref. 10 pp. 56-91; Ref. 11, pp. 29-43). Precipitation could infiltrate the contaminated soil beneath the pavement (Ref. 15, pp. 1, 2).

In 1998, ground water sampling was conducted as part of the Phase II investigation on the 5030 Firestone Boulevard portion of the Jervis B. Webb Co. property. Ground water samples collected from monitoring well MW-1, located on the Jervis B. Webb Co. property, indicated that TCE was present in ground water at a maximum concentration of 24,000 ug/l and PCE was present in ground water at a maximum concentration of 140 ug/l (Ref. 11, pp. 5, 15, 16, 72, 74). The maximum contaminant level (MCL) for TCE and PCE is 5 ug/l (Ref. 2, p. 11; Ref. 13, p. 1).

In 2005, ground water samples from the property were collected as part of an annual ground water monitoring program. Ground water samples collected beneath the property, from monitoring well MW-1, indicated that TCE was present in ground water at a maximum of 24,979 ug/l (Ref. 30, pp. 1, 8, 17, 24). 1,1-DCE and trans-1,2-DCE were also detected in ground water samples at concentrations of 239.8 ug/l and 66.8 ug/l, respectively (Ref. 30, pp. 17, 23).

Monitoring well MW-1 is screened between 40 and 70 feet bgs (Ref. 11, pp. 21, 29-33). Examination of DWR Plate 3A and Figure A-1 indicated that monitoring well MW-1 is located nearest to transect line B-B', approximately 0.25 miles from Well L1 and approximately 0.25 miles from Atlantic Avenue (Ref. 11, p. 26; Ref. 22, Plate 3A; Ref. 28, p. 2; Figures A-1 and A-2 of the HRS documentation record). Examination of DWR geological section B-B', indicates that the edge of the Gaspar Aquifer occurs at approximately 50 feet bgs in the vicinity of 2S/12W-31L1 (Ref. 22, Plate 6A). Monitoring well MW-1 is screened in the Gaspar Aquifer.

Interconnection between the Semi-Perched, Gaspar, Exposition, and Gage aquifers is established within 2 miles of Source 1 at the property as follows (Ref. 1, Section 3.0.1.2.1):

- Contamination has been documented in monitoring well MW-1, located on the Jervis B. Webb Co. property (Ref. 11, pp. 72, 74, 77, 82; Ref. 30, pp. 23, 24). Monitoring well MW-1 is screened within the Gaspar Aquifer (see the description in the preceding paragraph and in Section 3.0.1 of the HRS documentation record) (Ref. 11, pp. 21, 29-33; Ref. 22, Plate 3A and 6A; Ref. 28). This supports the evidence that the Bellflower Aquiclude and Semi-perched Aquifer are interconnected with the underlying formations (i.e., Lakewood Formation) since contaminants have passed through to the lower aquifers.
- An examination of DWR Geologic Sections B-B' and L-L' indicates that the Gaspar Aquifer is in direct contact with the Exposition Aquifer in the site vicinity (Ref. 22, Plates 3A, 6A, and 6E; Figures A-1 and A-2 of the documentation record).
- An examination of DWR Geologic Section B-B' indicates that the unnamed aquiclude between the Exposition and Gage Aquifers is not continuous within two miles of the source at the Jervis B. Webb Co. site. This aquiclude is shown as pinching out approximately 1,500 feet to the west of the property, resulting in a merging of the two aquifers [Ref. 1, Section 3.0.1.2.1; Ref. 22, Plates 3A and 6A (Geologic Section B-B'); Figures A-1 and A-2 of the HRS documentation record].

The Jervis B. Webb Co. site is located in an urban area, in which numerous drinking water wells are located (Ref. 14; Ref. 24; Ref. 25; Ref. 27; Figure A-1 of the HRS documentation record). Eight drinking water wells screened within the Gage and Exposition Aquifers are located within 4 miles of Source 1 (Ref. 4; Ref. 14; Ref. 22, Plate 3A; Ref. 24; Ref. 25; Ref. 27; Ref. 28, p. 2; Section 3.3.2.4 and Figure A-4 of the HRS documentation record).

An observed release to the aquifer has been documented in monitoring well MW-1 at the Jervis B. Webb Co. site. Hazardous substances that meet the criteria for an observed release by chemical analysis were detected in Source 1 (see Section 2.2.2 of this documentation record). Background well MW-2 used to evaluate an observed release by chemical analysis is located upgradient of the source at the Jervis B. Webb Co. site. An observed release of 1,1-DCE, trans-

1,2-DCE, PCE and TCE is documented in MW-1 at the Jervis B. Webb Co. site based on chemical analysis (see above tables in Section 3.1.1 of the HRS documentation record).

The evidence provided in this section of the HRS documentation record for the Jervis B. Webb Co. site documents that an observed release has occurred by chemical analysis of ground water samples to the Semi-Perched/Gaspur/Exposition/Gage interconnected aquifer of the hazardous substances listed below (Ref. 1, Sections 2.3 and 3.1.1).

Hazardous Substances Released

1,1-DCE, Trans-1,2-DCE, PCE and TCE.

Ground Water Observed Release Factor Value: 550

3.1.2 POTENTIAL TO RELEASE

Potential to Release was not scored, because an Observed Release was established.

3.2 WASTE CHARACTERISTICS

3.2.1 TOXICITY/MOBILITY

Hazardous Substance	Source No.	Toxicity Factor Value (Ref. 1, Section 3.2.1.1)	Mobility Factor Value*	Does Hazardous Substance Meet Observed Release? (Y/N)	Toxicity/Mobility Factor Values (Ref. 1, Section 3.2.1.3, Table 3-9)	Reference
TCE	1	10,000	1	Y	10,000	Ref. 13, p. 1
PCE	1	100	1	Y	100	Ref. 2, p. 11
1,1-DCE	--	100	1	Y	100	Refs. 2, p. 6; 31, p. 6, 9; 32, p. 7, 8
Trans-1,2-DCE	--	100	1	Y	100	Refs. 2, p. 6; 31, p. 6, 9; 32, p. 7, 8

* Hazardous substances meeting the criteria for an observed release by chemical analysis receive a mobility factor value of 1 (Ref. 1, Section 3.2.1.2).

Notes:

Y: Yes
N: No

Toxicity/Mobility Factor Value: 10,000
(Ref. 1, Section 3.2.1.3, Table 3-9)

3.2.2 HAZARDOUS WASTE QUANTITY

Source No.	Source Type	Source Hazardous Waste Quantity
1	Contaminated Soil	>0
sum:		>0

The hazardous waste quantity assigned from Section 2.4.2 of the HRS documentation record for Source 1 is unknown, but greater than 0. The hazardous waste quantity factor value assigned for the ground water pathway is 10 (Ref. 1, Sections 2.4.2.2 and 3.2.2, Table 2-6).

Hazardous Waste Quantity Factor Value: 10

3.2.3 WASTE CHARACTERISTICS FACTOR CATEGORY VALUE

Toxicity/Mobility Factor Value: 10,000

Hazardous Waste Quantity Factor Value: 10

Toxicity/Mobility Factor Value X Hazardous Waste Quantity Factor Value: 100,000

Waste Characteristics Factor Category Value (subject to a maximum of 100): 18
(Ref. 1, Sections 2.4.3.1 and 3.2.3, Table 2-7)

3.3 TARGETS

The Jervis B. Webb Co. property is located in an urban area, in which numerous drinking water wells are located (Ref. 14; Ref. 24; Ref. 25; Ref. 27; Figures A-1 and A-4 of the HRS documentation record). Ground water contamination within the Gaspar Aquifer has been identified beneath the Jervis B. Webb Co. property (Ref. 11, pp. 8, 15, 72, 74, 77, 82; Ref. 30, pp. 17, 23-24, 26; Ref. 22, Plate 3A; Sections 3.0.1 and 3.1.1 of the HRS documentation record). Eight drinking water wells screened within the Gage and Exposition aquifers are located within 4 miles of the source at the site (Ref. 4; Ref. 14, p. 2; Ref. 22, Plate 3A; Ref. 24; Ref. 25; Ref. 27; Section 3.3.2.4 and Figure A-4 of the HRS documentation record). These wells were evaluated for potential contamination. Interconnections between the Semi-perched, Gaspar, Exposition, and Gage aquifers is established within 2 miles of the source at the site and therefore are eligible to be scored as one interconnected aquifer (Ref. 1, Section 3.0.1.2.1; Ref. 22, Plates 3A, 6A, and 6E; Section 3.0.1 and Figures A-1 and A-2 of the HRS documentation record).

3.3.1 NEAREST WELL

Well ID: City of South Gate Well 24. This well is located approximately 0.3 mile east of Source 1 at the Jervis B. Webb Co. site (Ref. 14, pp. 1-2; Ref. 28, p. 2; Figure A-4 of the HRS documentation record). Examination of DWR Plate 3A indicated that City of South Gate Well 24 is located nearest to transect line L-L'-L'', approximately 0.15 mile from Well A5 and 0.25 mile from Well B3 (Ref. 22, Plate 3A; Ref. 14). Examination of DWR geological section L-L'-L'' indicates that the tip of the Gage Aquifer occurs at approximately 300 feet bgs and the bottom occurs at approximately 350 feet bgs in the vicinity of Wells 3S/12W-6A5 and 3S/12W-6B3 (Ref. 22, Plate 6E). The first perforation for City of South Gate Well 24 occurs at 310 feet bgs (Ref. 14). City of South Gate Well 24 is screened in the Gage Aquifer.

Level of Contamination (I, II, or potential): Potential. Sampling data are not available for this well so Level I or II actual contamination cannot be documented.

Nearest Well Factor Value: 18
(Ref. 1, Section 3.3.1; Table 3-11)

3.3.2 POPULATION

Within a 4-mile radius of the site sources, there are at least eight drinking water wells that serve a total population of approximately 62,256 people. The wells located within the 4-mile radius encompass municipal drinking water wells (Ref. 1, Sections 3.0.1.1 and 3.3.2; Ref. 14; Ref. 24; Ref. 25; Ref. 27; Figure A-4 of the HRS documentation record).

3.3.2.1 Level of Contamination

3.3.2.2 Level I Concentrations

Level I Concentrations are not assigned.

Level I Concentrations Factor Value: 0

3.3.2.3 Level II Concentrations

Level II Concentrations are not assigned.

Level II Concentrations Factor Value: 0

3.3.2.4 Potential Contamination

Four municipalities that have public water systems located within 4 miles of the sources at the site were evaluated (Ref. 1, Section 3.3.2; Figure A-4 of the HRS documentation record). The four municipalities are the City of South Gate, Walnut Park Mutual Water Company, Maywood Mutual Water Company #3, and City of Lynwood. Each municipality's water supply system is described below.

City of South Gate

The City of South Gate operates a drinking water system that serves approximately 96,375 people. Currently, the City of South Gate obtains all of its drinking water from ground water. The blended system consists of seven active drinking water wells (Wells 14, 19, 24, 25, 26, 27 and 28), four stand-by wells (Wells 14, 19, 22B, 23), and most recently one destroyed (Well 7). No single well provides more than 40 percent of the total demand at any given time. Wells 14 and 19 provide 30 percent of the demand, Wells 24 and 25 provide 20 percent of the demand, Well 26 provides 20 percent of the demand, Well 27 provides 10 percent of the demand, and Well 28 provides 20 percent of the demand. The City of South Gate does not sell or purchase water to other water systems and/or water users. In 2002, water quality sampling detected TCE in standby Well 7 at a concentration of 10.5 parts per million (Ref. 14, p. 1).

Examination of DWR Plate 3A indicated that City of South Gate Well 24 is located nearest to transect line L-L'-L'', approximately 0.15 miles from Well A5 and 0.25 miles from Well B3 (Ref. 22, Plate 3A; Ref. 14; Ref. 28, p. 2). Examination of DWR geological section L-L'-L'' indicates that the tip of the Gage Aquifer occurs at approximately 300 feet bgs and the bottom occurs at approximately 350 feet bgs in the vicinity of Wells 3S/12W-6A5 and 3S/12W-6B3 (Ref. 22, Plate 6E). The first perforation for City of South Gate Well 24 occurs at 310 feet bgs (Ref. 14, p. 2). City of South Gate Well 24 is screened in the Gage Aquifer.

Calculation: 96,375 people/7 wells = 13,767.85 people per well

Walnut Park Mutual Water Company

The Walnut Park Mutual Water Company operates a drinking water system that serves approximately 17,000 people. The system consists of two active drinking water wells, Well 10 and Well 11, and one standby well, Well 12. Currently, Well 12 is non-operational and not contributing any water to the system. The Walnut Park Mutual Water Company does not sell or purchase water from any other water purveyors. All of the water distributed by Walnut Park Mutual Water Company is from ground water. Water from the two wells is blended evenly prior to distribution (Ref. 24).

Examination of DWR Plate 3A indicated that Walnut Park Mutual Water Company Wells 10 and 11 are located nearest to transect line K-K'-K'', approximately 0.25 mile from Wells P2 and B1 (Ref. 3; Ref. 22, Plate 3A; Ref. 24; Ref. 28, p. 2; Figure A-1 of the HRS documentation record). Examination of DWR geologic section K-K'-K'' indicates that the tip of the Exposition Aquifer occurs at approximately 150 feet bgs and the bottom occurs at approximately 250 feet bgs in the vicinity of Wells 2S/13W-22P2 and 2S/13W-27B11 (Ref. 22, Plate 6E). The first perforations

for Walnut Park Mutual Water Company Wells 10 and 11 occur at 205 feet bgs and 203 feet bgs, respectively (Ref. 24). Wells 10 and 11 are screened in the Exposition Aquifer.

Calculation: 17,000 people/2 wells = 8,500 people per well

Maywood Mutual Water Company #3

The Maywood Mutual Water Company #3 operates a drinking water supply system that contains three active drinking water wells (Prospect #1, District #4, and Warehouse #7) that serve approximately 9,500 people. The Maywood Mutual Water Company #3 obtains all of its drinking water from ground water. The Prospect #1 well contributes 22.7 percent to the system, the District #4 well contributes 34.9 percent to the system, and the Warehouse #7 well contributes 42.4 percent to the system. The Maywood Mutual Water Company #3 does not purchase or sell their water to any other water purveyors. All three wells are screened in the Exposition Aquifer (Ref. 25).

Well Name	Gallons Per Minute (gpm)	Percentage of Supply	Associated Population	Reference
Prospect #1	700	22.7	$9,500 * 0.227 = 2,156.5$	Ref. 25
District #4	1,300	34.9	$9,500 * 0.349 = 3,315.5$	Ref. 25
Warehouse #7	1,000	42.4	$9,500 * 0.424 = 4,028$	Ref. 25

City of Lynwood

The City of Lynwood operates a drinking water supply system that contains five active drinking water wells (Wells 5, 8, 9, 11, and 19) that serve approximately 65,965 people. Currently, all of the water is obtained from ground water, however approximately one to two percent of the water distributed is purchased from the Municipal Water District, on an as needed basis. No one well supplies more than 40 percent to the entire system. Well 5 contributes 9.73 percent to the system, Well 8 contributes 19.47 percent to the system, Well 9 contributes 21.24 percent to the system, Well 11 contributes 14.16 percent to the system, and Well 19 contributes 35.4 percent to the system (Ref. 27).

Examination of DWR Plate 3A indicated that City of Lynwood Well 8 is located nearest to transect line C-C'-C'', approximately 0.75 mile from Well Q1 (Ref. 22, Plate 3A; Ref. 27; Ref. 28, p. 2). Examination of DWR geologic section C-C'-C'' indicates that the tip of the Exposition Aquifer occurs at approximately 175 feet bgs and the bottom occurs at approximately 260 feet bgs in the vicinity of Well 3S/13W-12Q1 (Ref. 22, Plate 6B). Perforations for City of Lynwood Well 8 occur at 161 to 175 feet bgs, 207 to 216 feet bgs, and 241 to 247 feet bgs (Ref. 27). Well 8 is screened in the Exposition Aquifer.

Examination of DWR Plate 3A indicated that City of Lynwood Well 19 is located nearest to transect line K-K'-K'', approximately 1.0 mile from Well H1 and adjacent to the C-C'-C'' transect line (Ref. 22, Plate 3A; Ref. 27; Ref. 28, p. 2). Examination of DWR geologic section K-K'-K'' indicates that the tip of the Gage Aquifer occurs at approximately 250 feet bgs and the bottom occurs at approximately 300 feet bgs in the vicinity of Well 3S/13W-15H1 (Ref. 22,

Plate 6E). The City of Lynwood Well 19 is screened from 250 to 878 feet bgs (Ref. 27). Well 19 is screened in the Gage Aquifer.

Calculation: $65,965 \text{ people} / 6 = 10,994.16 \text{ people per well/water source}$

Distance-Weighted Population Values

Distance Category (miles)	Public and Private Wells	Population Served	Reference	Distance-Weighted Population Value (Ref. 1, Section 3.3.2.4, Table 3-12)
0 to -1/4	Total	0		0
> 1/4 to 1/2	Total	13,768		10,122
	City of South Gate Well 24	13,767.85	Ref. 14	
> 1/2 to 1	Total	0		0
> 1 to 2	Total	0		0
> 2 to 3	Total	20,494		2,122
	Maywood Mutual #3 District #4	3,315.5	Ref. 25	
	Maywood Mutual #3 Warehouse #7	4,028	Ref. 25	
	Maywood Mutual #3 Prospect #1	2,156.5	Ref. 25	
	City of Lynwood Well 8	10,994.16	Ref. 27	
> 3 to 4	Total	27,994		1,306
	Walnut Park Mutual Well 10	8,500	Ref. 24	
	Walnut Park Mutual Well 11	8,500	Ref. 24	
	City of Lynwood Well 19	10,994.16	Ref. 27	
TOTAL:				13,550

Sum of Distance-Weighted Population Values: 13,550

Sum of Distance-Weighted Population Values/10 (Ref. 1, Section 3.3.2.4): 1,355

Potential Contamination Factor Value: 1,355

3.3.3 RESOURCES

There is no information indicating that ground water drawn from any target well within 4 miles of the source at the site is used for commercial food/forage crop irrigation, livestock watering, commercial food preparation, or commercial aquaculture. It is likely that there are municipal and/or community swimming pools within the target distance limit that may be utilizing ground water from the aquifers being evaluated. However, the evaluation of resources would not affect the final HRS score or the listing decision.

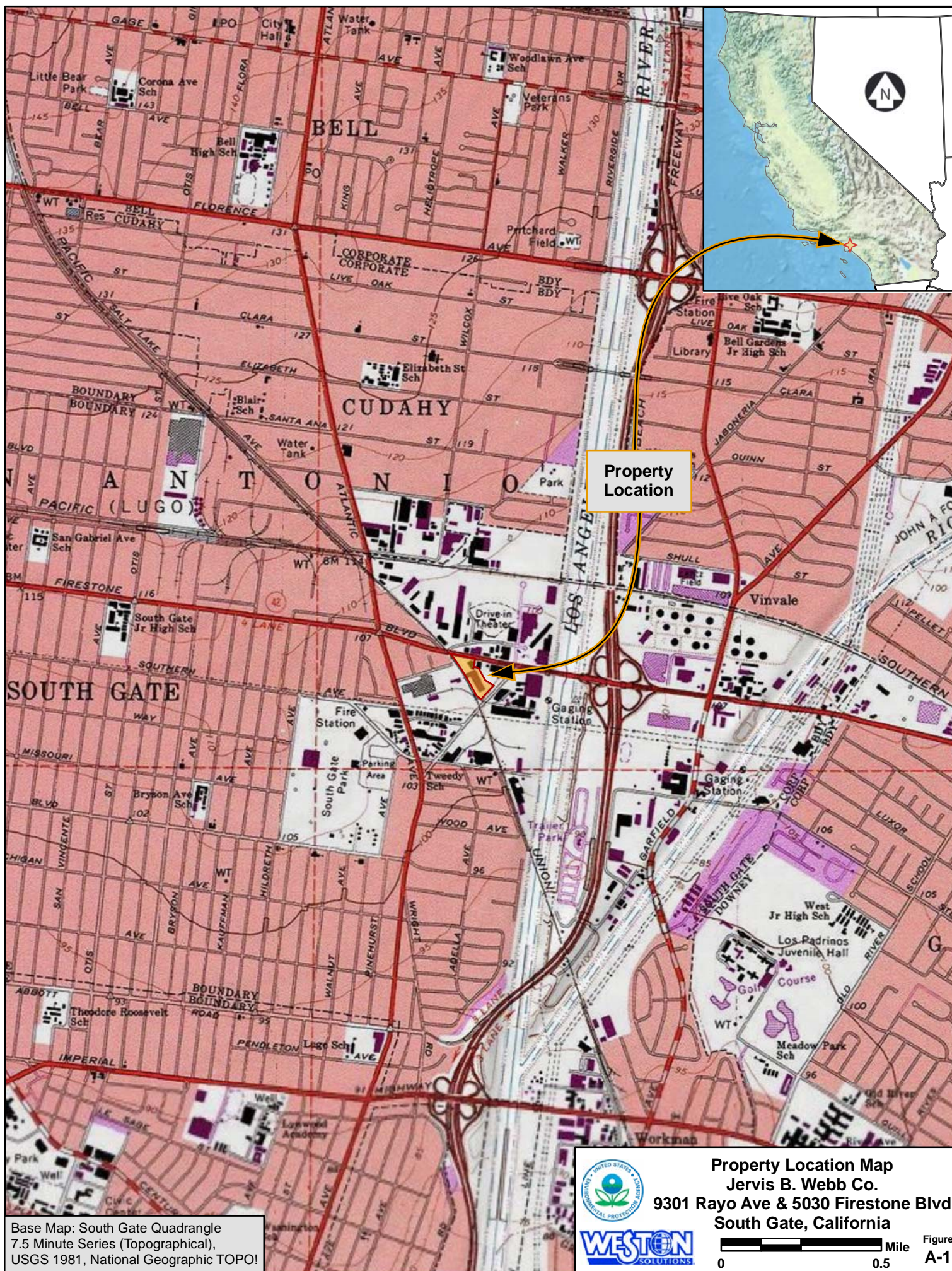
Resources Factor Value: 0

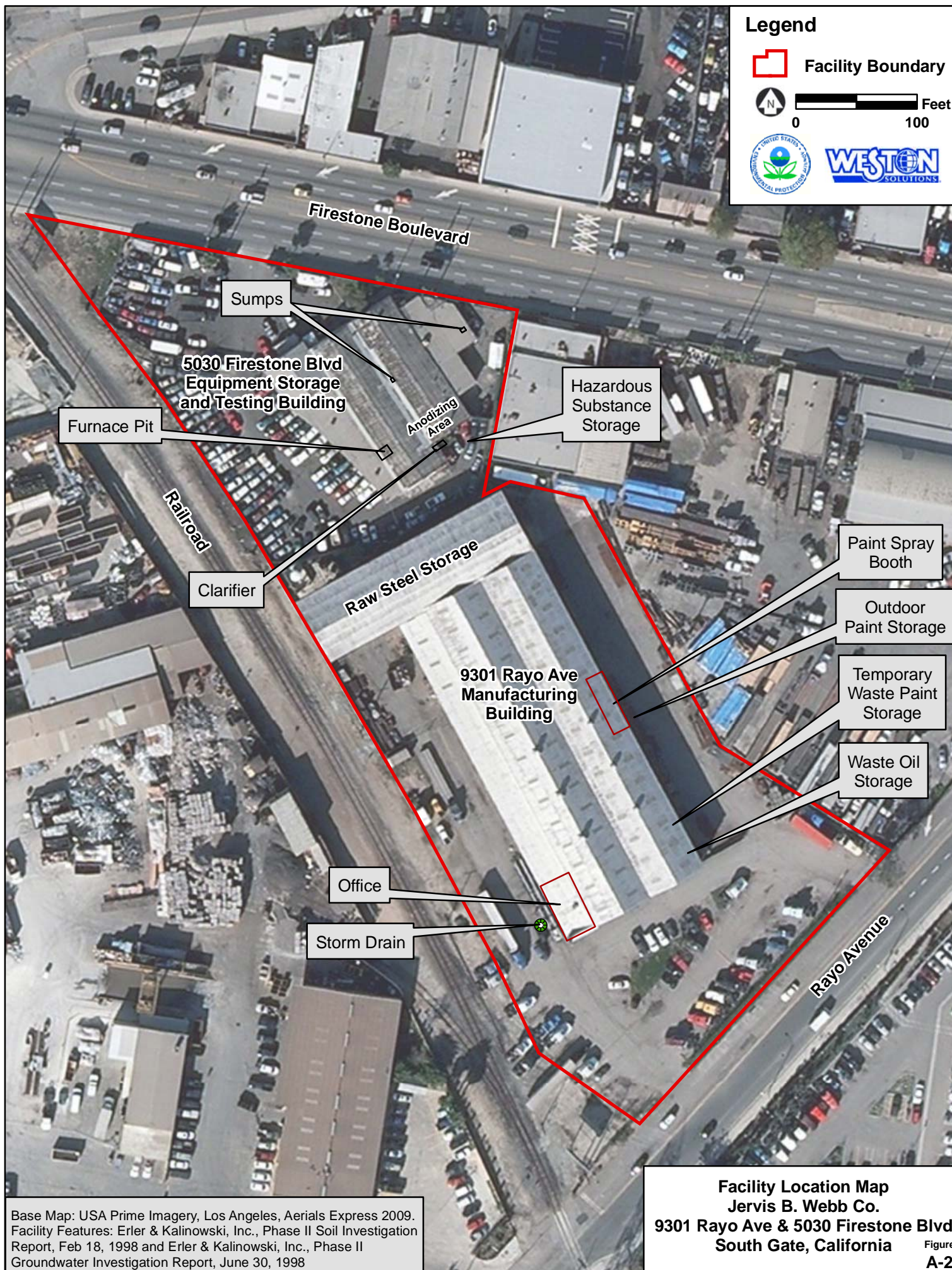
3.3.4 WELLHEAD PROTECTION AREA

The Wellhead Protection Area Factor Value was not evaluated for the Jervis B. Webb Co. HRS documentation record since the evaluation would not affect the final HRS site score or the listing decision.

Wellhead Protection Area Factor Value: 0

Attachment A





Base Map: USA Prime Imagery, Los Angeles, Aerials Express 2009.
Facility Features: Erler & Kalinowski, Inc., Phase II Soil Investigation Report, Feb 18, 1998 and Erler & Kalinowski, Inc., Phase II Groundwater Investigation Report, June 30, 1998

